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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,775	12/27/2001	Byung Keun Lim	HI-0069	9768
34610	7590	06/16/2006	EXAMINER	
FLESHNER & KIM, LLP P.O. BOX 221200 CHANTILLY, VA 20153			DAVIS, CYNTHIA L	
			ART UNIT	PAPER NUMBER
			2616	

DATE MAILED: 06/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

A

Office Action Summary	Application No. 10/026,775	Applicant(s) LIM, BYUNG KEUN	
	Examiner Cynthia L. Davis	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 9-12 and 14 is/are rejected.
- 7) ☒ Claim(s) 5, 7, 8 and 13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/1/2004</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 6, and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mustajarvi in view of Haumont.

Regarding claim 1, an apparatus realizing a link access control protocol for IP multicasting/broadcasting (M/B) transmission in a mobile communication network, the apparatus comprising: a packet data serving node (PDSN) for receiving a packet from an IP packet server or an Internet host and transmitting the packet after converting into a transmission format is disclosed in Mustajarvi, column 2, line 656-column 3, line 2 (data from the SGSN, which is a PDSN, see column 1, lines 35-40, is processed by a SNDCP function for transmission). A base station system including a base station controller/ packet controller function (BSC/PCF) and a base transmission station (BTS) is disclosed in figure 1, element BSC1 and BTS1. the BSC/PCF receiving the packet from the PDSN, converting the packet into a cellular M/B request message and transmitting the cellular M/B request message into the BTS under the control is

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disclosed in column 3, lines 2-3 (the SNDCP passes the data to the LLC, which converts it into cellular format). The BTS receiving the packet from the BSC, segmenting the IP packet into a radio frame size and transmitting radio frames of IP M/B packet is disclosed in column 3, lines 4-5 (the RLC segments the data into MAC-compatible format for transmission). A mobile terminal for receiving and assembling the segmented radio frames of packet, transmitted from the BTS by radio, to form the packet is disclosed in column 3, line 1 (the data is to or from an MS). A M/B link access control means based upon a re-transmission request message for frame transmission confirmation on the radio link between the mobile terminal and the BTS/BSC is disclosed in column 3, lines 14-15. That the packet is a multicast/broadcast IP packet is missing from Mustajarvi. However, Haumont discloses in column 2, lines 10-12, and column 4, line 64-column 5, line 1, a GPRS system that included a PDSN and supports IP multicast. It would have been obvious to one skilled in the art at the time of the invention to support multicast in the system of Mustajarvi. The motivation would be to allow a sender to transmit data to recipients in a destination area by using one service request (see Haumont, column 1, lines 52-54).

Regarding claim 2, a LAC sub-layer including a link access controller (LAC) for storing the IP M/B packet, received from the BSC/PCF, to an internal buffer, and segmenting the IP M/B packet into a radio packet frame size necessary to a cellular IP multicast MAC protocol (CIPB) and a medium access control (MAC) sub-layer for transmitting a CIBP service data unit (SDU), received from the CIBP at a lower layer of the LAC, into the mobile terminal via a physical layer is disclosed in Mustajarvi, column

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3, lines 3-6 (the RLC, which is equivalent to the LAC, receives and segments the data into MAC-compatible format).

Regarding claim 3, the LAC allocates sequence numbers to the radio packet frames of the segmented IP M/B packet, and transfers the CIBP SDU into the CIBP is not specifically disclosed in Mustajarvi. However, in Mustajarvi, the LLC layer works with transmission and receiving sequence numbers (see column 3, lines 19-21). It would have been obvious to one skilled in the art at the time of the invention to have the LAC allocate sequence numbers to the transmitted MAC frames. The motivation would be to provide information that is used to control both ends of the link (Mustajarvi, column 3, lines 15-16).

Regarding claim 6, the mobile terminal comprising: an MAC sub-layer with a physical layer for receiving the radio packet frames transmitted from the BTS, and a cellular IP multicast MAC protocol (CIBP) for transferring the received radio packet frames as a CIBP SDU into an upper layer; and an LAC sub-layer for assembling data in the CIBP SDU transferred from the MAC sub-layer to form the IP M/B packet and transferring the IP M/B packet into an upper data layer is disclosed in Mustajarvi, column 2, line 66-column 3, line 13 (disclosing a MAC and an LLC layer at both ends of the radio traffic path).

Regarding claim 9, each of the mobile terminal and the BTS/BSC comprises a signaling LAC for transmitting the re-transmission request message in processing transmission/receiving of the IP M/B packet is disclosed in Mustajarvi, column 3, lines 14-16 (the LLC controls retransmission at both ends of the link).

Regarding claim 10, receiving by an LAC of a BTS/BSC an IP packet transferred via a BSC/PCF from a Internet host and a server, storing the IP packet into an internal buffer, and segmenting the IP packet into a radio packet frame size is disclosed in Mustajarvi, column 2, line 66-column 3, line 6 (the LLC/RLC receive the packets from a SGSN, which is an internet server, and segment them into radio frames). Adding sequence numbers to the segmented radio packet frames is disclosed in column 3, lines 19-21. Transmitting a CIBP SDU into a mobile terminal is disclosed in figure 1 (showing transmission to mobile stations). Assembling, at the mobile terminal, the CTBP SDU for the received radio packet frames and forwarding the IP packet, and transferring the formed IP M/B packet into an upper layer is disclosed in column 3, lines 8-13. That the packet is a multicast/broadcast packet is missing from Mustajarvi. However, Haumont discloses in column 2, lines 10-12, and column 4, line 64-column 5, line 1, a GPRS system that included a PDSN and supports IP multicast. It would have been obvious to one skilled in the art at the time of the invention to support multicast in the system of Mustajarvi. The motivation would be to allow a sender to transmit data to recipients in a destination area by using one service request (see Haumont, column 1, lines 52-54).

3. Claims 4, 11-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mustajarvi in view of Haumont in further view of Bergenwall.

Regarding claim 4, the LAC transmits the sequence number of a CIBP SDU corresponding the re-transmission request message upon receiving the re-transmission request message, when receiving the re-transmission request message by using a

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signaling link access controller for receiving the re-transmission request message of a specific radio packet frame from the mobile terminal is missing from Mustajarvi.

However, Bergenwall discloses in column 9, lines 30-39, an LAC that requests retransmission of a faulty frame by sequence number, and then retransmits the frame by sequence number. It would have been obvious to one skilled in the art at the time of the invention to use the retransmission procedure of Bergenwall in the system of Mustajarvi. The motivation would be to use the sequence numbers that included in the frame headers to identify the corrupt frames (Bergenwall, column 2, lines 21-23).

Regarding claim 11, the LAC of the mobile terminal inspects receiving in the unit of the IP M/B packet to transmit a re-transmission request message about a SDU having a sequence number corresponding to the CIBP SDU, which is not received, into the BTS is missing from Mustajarvi. However, Bergenwall discloses in column 9, lines 30-39, an LAC that requests retransmission of a faulty frame by sequence number, and then retransmits the frame by sequence number. It would have been obvious to one skilled in the art at the time of the invention to use the retransmission procedure of Bergenwall in the system of Mustajarvi. The motivation would be to use the sequence numbers that included in the frame headers to identify the corrupt frames (Bergenwall, column 2, lines 21-23).

Regarding claim 12, the BTS/BSC confirms whether the re-transmission request message is received from the mobile terminal via a signaling LAC, and re-transmits the SDU about the sequence frame into the mobile terminal if the re-transmission request message is received is missing from Mustajarvi. However, Bergenwall discloses in

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column 9, lines 30-39, an LAC that retransmits a faulty packet in response to a retransmission request, which confirms the receipt of the request if the request is received. It would have been obvious to one skilled in the art at the time of the invention to use the retransmission procedure of Bergenwall in the system of Mustajarvi. The motivation would be to provide a better bit error rate via retransmissions (Bergenwall, column 2, lines 8-11).

Regarding claim 14, the size of the radio packet frame segmented in the BTS is variably changed according to channel conditions is missing from Mustajarvi. However, Bergenwall discloses in column 2, lines 42-33. It would have been obvious to one skilled in the art to vary the frame size of Mustajarvi with channel conditions. The motivation would be to optimize the frame size for transmission (see Bergenwall, column 2, lines 43-48).

Allowable Subject Matter

4. Claim 5, 7-8, and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia L. Davis whose telephone number is (571) 272-3117. The examiner can normally be reached on 8:30 to 6, Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (571) 272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

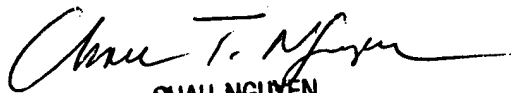
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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